

19/5

کلاس دوم فتره A

تالیف شماره ۲۲

نام و نام خانوادگی: رضا موسوی ملکی

$$\begin{cases} \alpha^2 - 5\alpha + 1 = 0 \\ \beta^2 - 5\beta + 1 = 0 \end{cases}$$

$$\alpha\beta = 1, \alpha + \beta = 5$$

$$\frac{\alpha^2 + \beta^2}{\alpha\beta^2} = \frac{\alpha^2\beta^2 + \beta^2}{(\alpha + \beta)\beta^2} = \frac{\alpha^2 + \beta^2}{\alpha + \beta} = \frac{(\alpha + \beta)(\alpha^2 - \alpha\beta + \beta^2)}{\alpha + \beta}$$

$$= \alpha^2 + \beta^2 - \alpha\beta = (\alpha + \beta)^2 - 2\alpha\beta = 25 - 2 = 23$$

$$\begin{vmatrix} -1 & 5 \\ -2 & -2 \end{vmatrix}$$

D ✓

$$\frac{1+1/5}{2} = 1, 25 \rightarrow 1-1, 25 = 0, 25 = \frac{1}{4}$$

$$\text{ext: } \begin{cases} x = -\frac{b}{2a} = \frac{1}{4} \\ y = \frac{-b}{a} = \frac{1}{2} \times 2 = \frac{1}{2} \end{cases} \rightarrow \text{مجموع ضرایب تابع} = \frac{-b}{a} = \frac{1}{2} \times 2 = \frac{1}{2}$$

$$\frac{\sqrt{\Delta}}{|a|} = \frac{1}{2} K \rightarrow \frac{\sqrt{1K^2 - 1}}{1} = \frac{1}{2} K \rightarrow 2\sqrt{K^2 - 1} = \frac{1}{2} K$$

$$K^2 - 1 = \frac{1}{4} K^2 \rightarrow \frac{3}{4} K^2 = 1 \rightarrow K^2 = \frac{4}{3} \Rightarrow \left[\frac{K^2}{2} \right] = 1$$

D ✓

$$\frac{1+5}{2} = 3 \rightarrow 3-3 = (-1) \rightarrow \frac{-b}{2a} = (-1) \rightarrow b = 2a$$

$$\alpha + \beta$$

$$\alpha + \beta = \frac{-b}{a} = (-2) \rightarrow (\alpha + \beta)^2 = \frac{\alpha^2 + \beta^2}{a} + 2\alpha\beta = 2$$

$$\alpha\beta = \frac{c}{a} = \frac{-1}{2} \rightarrow -a = 2c$$

$$\frac{x = (-1)}{y = 1} \rightarrow a - b + c = 1 \rightarrow c - a = 1$$

$$2c = 1 \rightarrow c = \frac{1}{2}$$

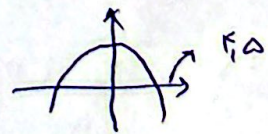
$$-x^2 + 5x + m = 0$$

$$\textcircled{1} \Delta \geq 0 \rightarrow 25 + 4m \geq 0 \rightarrow m \geq -\frac{25}{4}$$

$$\textcircled{2} -\frac{1}{2} + \frac{5}{2} + m < 0 \rightarrow 2, 25 + m < 0 \rightarrow m < -2, 25$$

$$\textcircled{3} -\frac{b}{2a} < \frac{1}{2} \rightarrow \frac{-b}{2a} = 1, 25 \checkmark$$

D ✓



$$\Rightarrow -\frac{25}{4} \leq m < -2, 25 \Rightarrow \{-4, -5, -2, -3\}$$

$$-\frac{\Delta}{f_a} = 2 \leadsto \frac{-(144 - (5m-1))}{5m} = 2$$

$$20m^2 - 12m = 144 = 0 \leadsto 5m^2 - 3m - 12 = 0$$

$$\Delta = 9 + 48 = 57 \leadsto \frac{3 \pm \sqrt{57}}{10} = 3, -2, 4 \quad (m > 0 \text{ = تیکتین مقدار است})$$

$$x = \frac{-b}{f_a} = \frac{12}{5} = 2.4$$

$$\alpha, \alpha, \beta \rightarrow a = \sqrt{\alpha\beta} = \sqrt{2a-1}$$

$$a^2 = 2a-1 \leadsto a-2a+1=0 \leadsto a=1$$

شرط وجود درجه برای $a=1$ را بررسی کن

$$x^2 + 4x + 1 = 0 \leadsto \Delta < 0$$

$$x^2 - vx^2 - a = 0 \quad \underline{x^2 = f} \quad t^2 - vt - a = 0$$

$$t = \frac{v \pm \sqrt{v^2 + 4a}}{2} = x^2 \leadsto x^2 = \frac{v + \sqrt{v^2 + 4a}}{2} \leadsto x = \pm \sqrt{\frac{v + \sqrt{v^2 + 4a}}{2}}$$

$$s = 0, \quad p = \frac{v + \sqrt{v^2 + 4a}}{-2} \Rightarrow 2p^2 - 3sp + rs = 2p^2 = 59 + \sqrt{49}$$

$$\text{ext} \left| \begin{array}{l} \frac{-b}{f_a} = \frac{r}{k} \\ \frac{f}{k} - \frac{1}{k} - y \end{array} \right. \quad \begin{array}{l} -f \times \frac{r}{k} - e = \frac{-1}{k} - e \\ -\frac{1}{k} - f = \frac{-e}{k} - y \end{array}$$

$$-\frac{f}{k} - y = -1 \iff \frac{r}{k} = 2 \leadsto k = 2$$

$$-mx^2 + mx + 1 = -m - x$$

$$mx^2 - (m+1)x - (m+1) = 0$$

$$\Delta < 0 \leadsto (m+1)^2 - 4m(-m-1) < 0$$

$$m^2 + 2m + 1 + 4m^2 + 4m = 5m^2 + 6m + 1 < 0$$

$$\Delta = 36 - 20 = 16 \leadsto \frac{-6 \pm 4}{10} = -1, -\frac{1}{5}$$

$$(-1, -\frac{1}{5}) \leadsto \text{منفرد صحیح}$$

$$\begin{array}{c} -1 \quad -\frac{1}{5} \\ + \quad - \quad + \end{array}$$